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elongates and divides
to give rise to
the seedlings.

Hw
Activity

Done

~~CW 06-2021~~
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Exercise

Multiple choice questions:

1. Tick (✓) the appropriate answers:

- (i) Radicle
- (ii) Plumule
- (iii) Maize
- (iv) Epigeal
- (v) Hypogeal
- (vi) Anther
- (vii) Stamen and carpels
- (viii) Apple

(EX) Cotyledons or endosperms

Short answer questions

Diagram, Question

- ←
1. Ans-1. Testa: It is the outer exposed part of the seed.
 2. Plumule: It is located between the two cotyledons and develops into a shoot.
 3. Radicle: It is located between the two cotyledons and develops into a root.
 4. Micropyle: It absorbs and allows the entry of as much as water as is required for germination.

tion.

5. Cotyledon: It stores the food material which is used by the seedling after growth.

2. Name the following:

(a) A seed which shows hypogeal germination

(a) - Pea

(b) ~~A~~ Maize grain

(c) Bean seed

(d) Bean seed

3. (a) Radicle and Plumule:
The radicle develops into a root, while the plumule develops into a shoot.

(b) Hilum and micropyle:
Hilum is the inner corner side of the seed.

It, where the seed was attached to the fruit wall. micropyle is a small pore which absorbs and allows water required for germination.

(c) Testa and Tegmen:
Testa is the outer exposed part of the seed coat, whereas tegmen is a thin membrane and lies under the testa. It is the inner part of the seed coat.

4. (i) It protects the seed from the unfavorable environmental conditions.
- (ii) Fruits store food in them.

5. Ans - a - iii
b - i
c - ii
d - v
e - iv

6. Ans - As the radicle emerges out of the seed earlier and develop in to a root. it helps in providing water and minerals for further growth of Plumule.

7. (a) False
(b) True
(c) False
(d) True

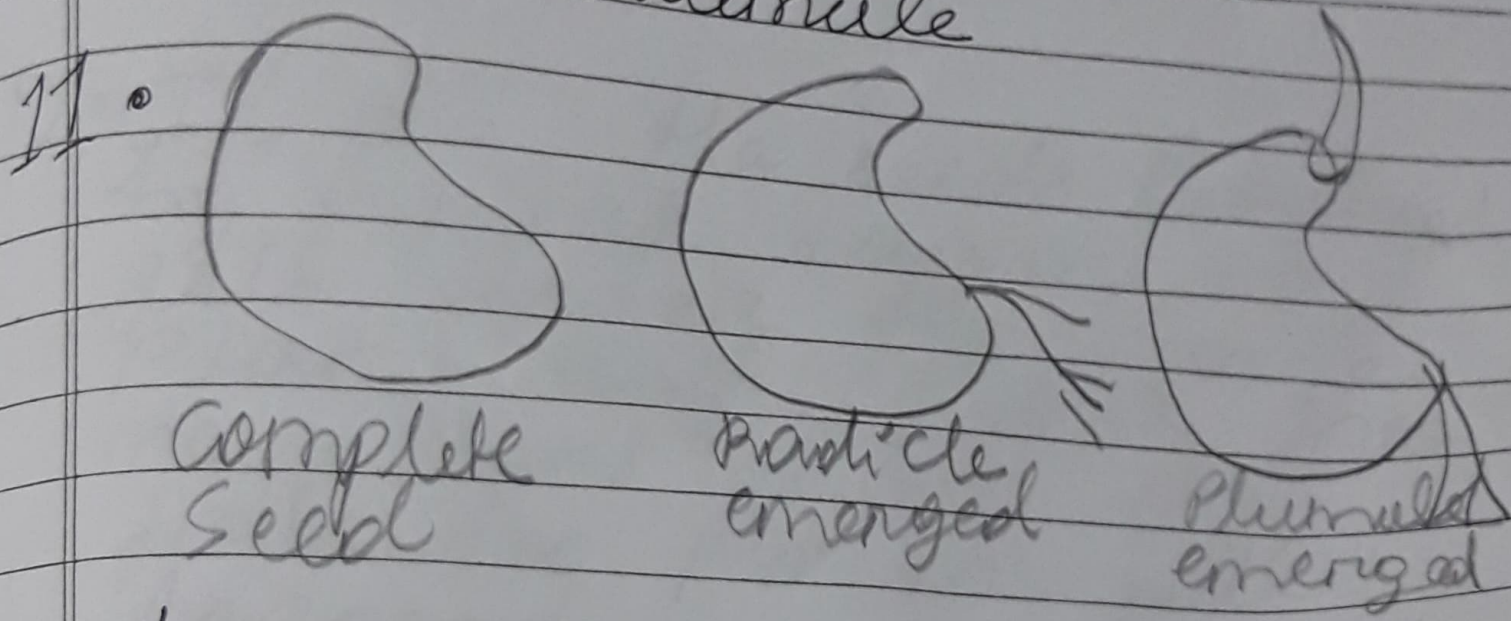
8. (a) It develops in to a root.
(b) It stores the food material - which is used by the seedling for growth.

9. It stores food in the form of starch.

(d) It absorbs water as much as germination is required for.

9. (a) Oxygen, suitable temperature and water.

10. (a) Roots: Radicles
(b) Leaves: Plumule



Long answer questions

1. Pollination is the transfer of pollen grains from the anther to the stigma of

a flower.

The two types are:

- (a) Self Pollination; It occurs within a single flower or between the flowers of the
- (b) Cross pollination. It occurs within a single ~~flower~~ two different plants of same kind.

2. If all the seeds produced by a plant happen to fall under the same plant and sprout into new plants, then the following problem will happen.

- (a) As a large number of plants will grow in a very small area, the water and minerals

and available for the plants will be very limited.

(b) The air and sunshine for them will be not enough. As a result most of the sprouts will die.

3. As flower is the most beautiful and colourful part of a plant which serves as a reproductive organ.

1. The bean seed is an example of a dicot seed, whose diagram is shown ~~below~~ at the end.

The green outermost covering of the seed is called the seed coat. It protects the

seed from insects and bacteria as well as from mechanical injury. The seed coat is again made up of two parts. The outer exposed part is called the testa and the inner part is called tegmen. A scar called hilum there is present in the inner concave side of the seed. This is the place where the seed is attached to the fruit wall. Above the hilum there is a small pore called micropyle. It absorbs and allows the entry of water required for germination. The seed is made up of two fleshy seed leaves called the

Cotyledons. They contained stored food material which is used by the seedling for growth. In between the two cotyledons a delicate embryo is located. It consists of the ~~plumule~~ radicle and Plumule. The radicle develops into a root and the Plumule develops into a shoot.

5. The Process by which the embryo in the seed becomes active in the presence of water, air and suitable temperature and grows into a young plant is called germination. The two types of germination are epigeal germination and hypogeal germination.

Epigeal germination: The two types of germination in which the cotyledons are called above the soil is called ~~hypog~~ epigeal germination. The seedling food and leaves start preparing the growing plant. Germination of a bean seed is an example of epigeal germination.

Hypogeal germination: The type of germination in which the cotyledons remain below the ground is called hypogeal germination. The plumule only come out of the soil to form leaves. Germination of pea seed and maize grain are examples of hypogeal germination.

6. What Water, air and Favorable temperature are the three conditions required for the germination of seeds.

7. Hypogeal

1. Cotyledons remain below the ground.

2. Epicotyl elongates faster than hypocotyl hence cotyledons remain below.

Examples: Maize, Rice, groundnut

Epigeal

1. Cotyledons are pushed above the ground.

2. Hypocotyl elongates faster than epicotyl. Hence cotyledons get pulled above.

Examples: beans, tamarind, papaya, cucumber.

(a) Sepals: Sepals are the
green outermost part of a
flower.

(b) Petals: This forms the
second inner whorl.
Petals are the large
fragrant and brightly
coloured parts of the
flower.

(c) Anthers: It is located in
the third whorl of the
flower. The filament of
the stamen bears the
anther at its tip.

(d) Stigma: It is located in
the fourth and the
innermost whorl of the
flower. The style bears
the stigma at its tip.

b) Petal

1. Petal is Present in the second inner whorl of the flower.

2. Petals are usually coloured or white but never green. It makes the flower attractive and attracts the insects for pollination.

Sepal

1. It is the outermost whorl of a flower.

2. Sepals are green leaf like structures. They enclose the inner part of the flower to provide necessary protection to a young bud.

c) Filament

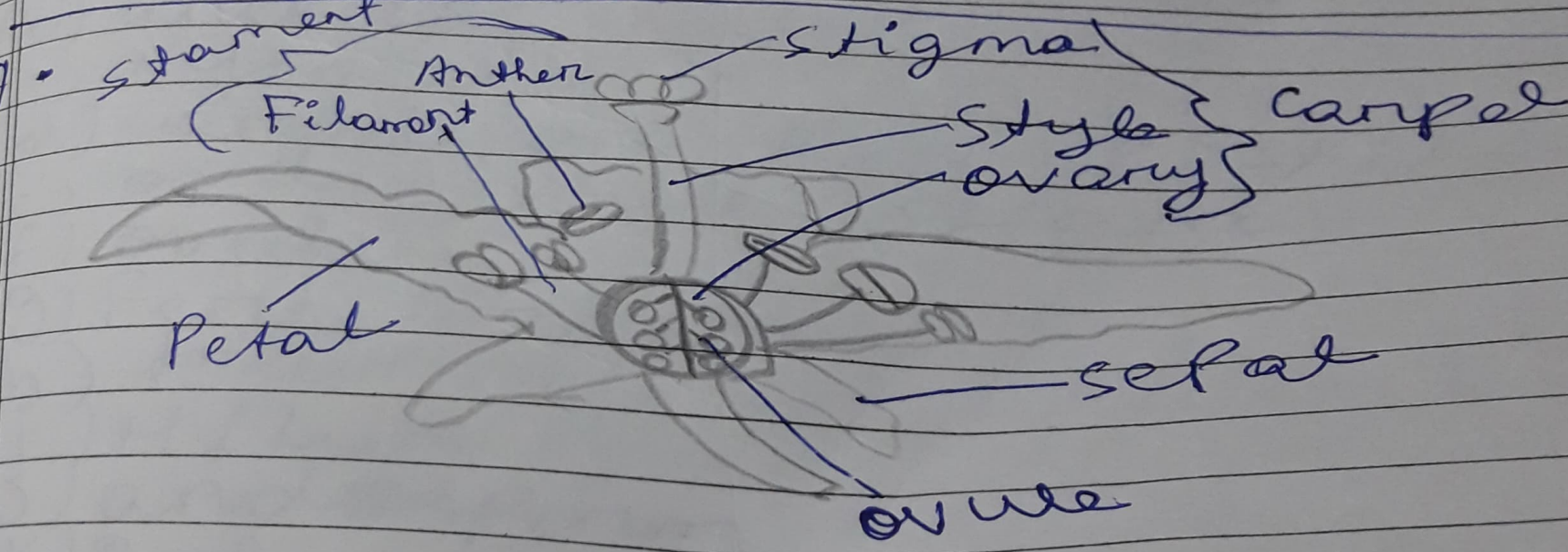
1. Filament is a thin thread like structure which bears the anther on its tip.

style

1. Style bears an expanded stigma at its tip and bears the ovules on it.

the pollen grain into the ovary.

Pollen grains	ovule
1. Pollen grains contain the male gametes.	1. ovule contains the female gametes.
2. Pollen grains germinate to produce Pollen tube which carry the male gametes to the ovary.	2. After fertilization the ovule develops into a seed



10(a) Ovary

ovule

1. It is the female reproductive part of a flower.

1. Ovule is located inside the ovary.

2. After fertilization the ovary turns into a fruit.

2. Ovule turns into a seed after fertilization.

EXTRA QUESTION AND ANSWER

- 10(a) Stalk or pedicel
- androecium
- gynoecium
- carpel or the Pistil
- ovary, style, stigma
- ovules

Fertilization

Fruit